

SLA7031M/SLA7032M/SLA7033M

2-Phase/1-2 Phase Excitation

Absolute Maximum Ratings

(T_a=25°C)

Parameter	Symbol	Ratings			Unit
		SLA7031M	SLA7032M	SLA7033M	
Motor Supply Voltage	V _{CC}	46			V
Control Supply Voltage	V _S	46			V
FET Drain-Source Voltage	V _{DSS}	100			V
Input Voltage	V _{IN}	-0.3 to +7			V
	V _{SYNC}	-0.3 to +7			
Reference Voltage	V _{REF}	-0.3 to +7			V
Sense Voltage	V _{RS}	-5 to +7			V
Output Current	I _O	1	1.5	3	A
	P _{D1}	4.5(Without Heatsink)			W
Power Dissipation	P _{D2}	35(T _c =25°C)			W
Channel Temperature	T _{ch}	+150			°C
Operating Ambient Temperature	T _a	-20 to +85			°C
Storage Temperature	T _{stg}	-40 to +150			°C

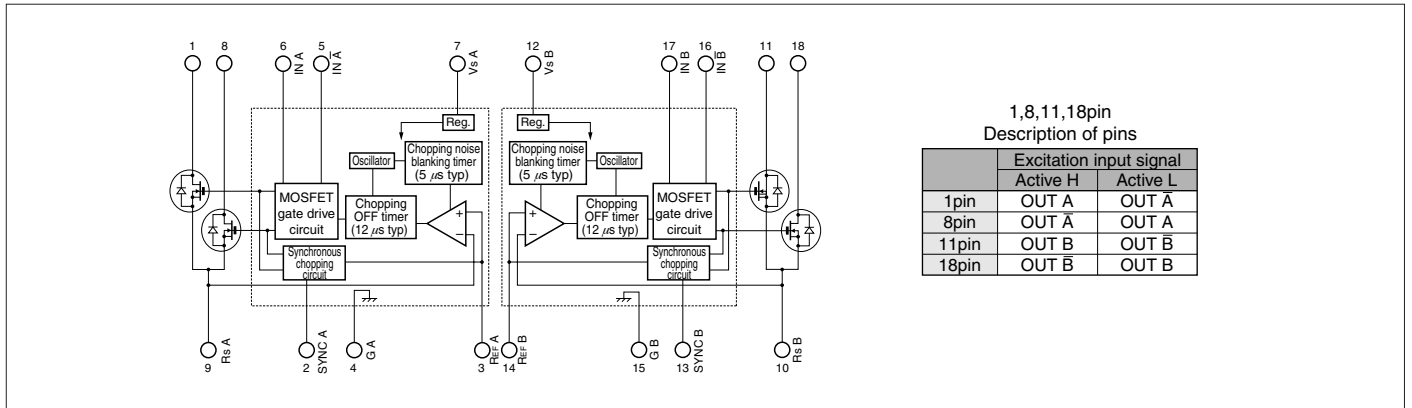
Recommended Operating Conditions

Parameter	Symbol	Ratings		Unit	Remarks
		min.	max.		
Motor Supply Voltage	V _M		44	V	
Control Supply Voltage	V _S	10	44	V	
REF Input Voltage	V _{REF}	0.1	1.0	V	The control current precision is degraded at 0.1V or lower.
	V _{REF(dis)}	4.0	5.5	V	Output MOS FET OFF
Case Temperature	T _C		100	°C	Temperature of 4(15)-Pin Lead(without heatsink)

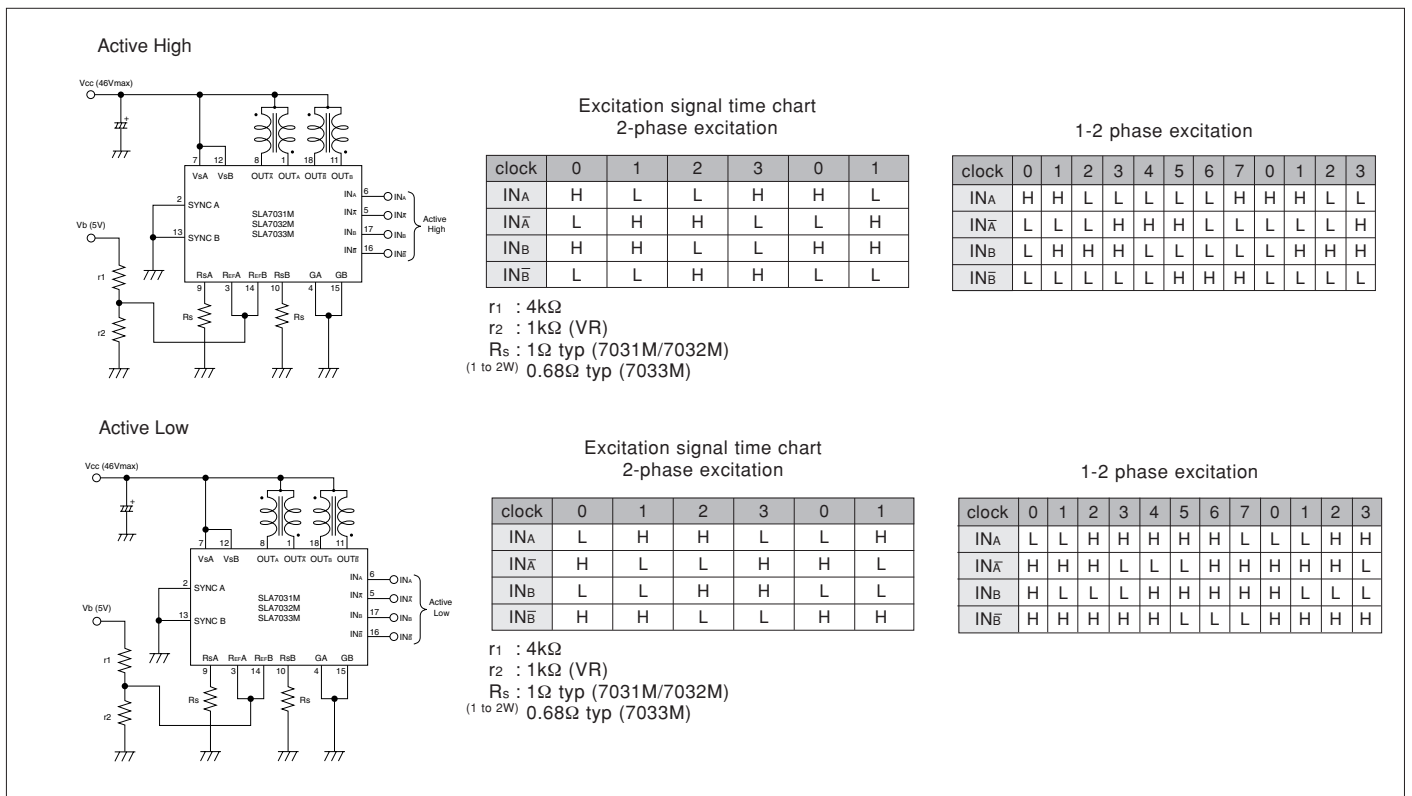
Electrical Characteristics

Parameter	Symbol	Ratings									Unit			
		SLA7031M			SLA7032M			SLA7033M						
		min.	typ.	max.	min.	typ.	max.	min.	typ.	max.				
Control Supply Current	I _S	10			15			10			15			mA
	Condition	V _S =44V												
Control Supply Voltage	V _S	10	24	44	10	24	44	10	24	44	V			
FET Drain-Source Voltage	V _{DSS}	100									V			
	Condition	V _S =44V, I _{DSS} =250μA												
FET ON Voltage	V _{DS}	0.85			0.6			0.85			V			
	Condition	I _D =1A, V _S =10V												
FET Diode Forward Voltage	V _{SD}	1.2			1.1			2.3			V			
	Condition	I _{SD} =1A												
FET Drain Leakage Current	I _{DSS}	250			250			250			μA			
	Condition	V _{DSS} =100V, V _S =44V												
IN Terminal	Input Voltage (Active High)	V _{IH}	2.0									V		
		Condition	I _D =1A											
		V _{IL}	0.8			0.8			0.8					
	Input Voltage (Active Low)	V _{IH}	2.0									V		
		Condition	V _{DSS} =100V											
		V _{IL}	0.8			0.8			0.8					
Input Current	I _I	±1			±1			±1			μA			
	Condition	V _S =44V, V _I =0 or 5V												
SYNC Terminal	Input Voltage	V _{SYNC}	4.0									V		
		Condition	Synchronous chopping mode											
		V _{SYNC}	0.8			0.8			0.8					
	Input Current	Condition	Asynchronous chopping mode											
		I _{SYNC}	0.1			0.1			0.1			mA		
		Condition	V _S =44V, V _{SYNC} =5V											
I _{SYNC}	-0.1			-0.1			-0.1							
REF Terminal	Input Current	V _{REF}	0									V		
		Condition	Reference Voltage input											
		V _{REF}	2.0			2.0			2.0					
	Input Current	Condition	Output FET OFF											
		I _{REF}	±1			±1			±1			μA		
		Condition	No synchronous trigger											
Internal Resistance	R _{REF}	40									Ω			
	Condition	Resistance between GND and REF terminal at synchronous trigger												
Sense Voltage	V _{RS}	V _{REF}			V _{REF}			V _{REF}			V			
Switching Time	T _r	0.5									μs			
	T _{stg}	0.7												
	T _f	0.1												
	Condition	V _S =24V, I _D =0.8A												
Chopping OFF Time	T _{OFF}	12									μs			
	Condition	V _S =24V												

Internal Block Diagram



Typical Connection Diagram (Recommended component values)



External Dimensions (ZIP18 with Fin [SLA18Pin])

(Unit : mm)

